

REMARKS

Claims 1-42 are pending in the present application. The Examiner rejects all of the pending claims. Applicants herein cancel claim 25 without prejudice, hence, upon entry of the instant Amendment, claims 1-24 and 26-42 will be pending.

Objection to the Specification

The Examiner objects to the specification because it is allegedly unclear what “paste” refers to and has been interpreted to refer to “pulp.” Applicants refer to paragraph [0034] where reference is made to different pastes (virgin paste, recycle paste, etc.). It is important to know that the multi-layer “pulp” (the final product of the present invention) can be constituted by different kind of “pastes” (a virgin paste, a recycled paste, etc.). Therefore, both expressions do not refer to the same thing. In short, one is a pulp, and other expression refers to the different type of “pastes” which can constitute the “pulp.”

Objection to the Claims

The Examiner objects to claims 1, 25, 36 and 39 for various formality and grammatical reasons. Applicants herein amend the claims to cure the deficiencies. Applicants herein delete claim 25 without prejudice. In claim 1, Applicants replace the expression “providing fibre” by “providing a fibre” following the examiner’s suggestion. Replace the expression “which is being moved” by “are being moved” following the examiner’s suggestion. In claim 36, Applicants replace the expression “on then fibre” by “on the fibre” following the examiner’s suggestion. In claim 39, Applicants replace the expression “types” by “type” following the examiner’s suggestion.

Rejection under 35 U.S.C. 112, second paragraph

The Examiner objects to claims 1-42 under 35 U.S.C. 112, second paragraph for various grammatical reasons. Applicants submit that the newly amended claims overcome these rejections, in view of the clarification of the other points.

Claim 1 is amended to read “[...] depositing the fibre material on at least two section of the pulp-product manufacturing machine, thereby obtaining at least two fibre meshes that form

different layers of the fibre material at at least two layer forming sections [...] which are being moved [...].”

As regards claim 2, the correct interpretation is that there are a plurality of application means situated along the machine direction in the forming section. Applicants herein amend claim 2 to read as follows: “Method according to claim 1, wherein the application means occupies different positions with respect to the layer forming section.”

As regards claim 3, Applicants herein replace the expression “the fillers” by “the filler” following the examiner’s suggestion.

As regards claims 4 and 5, Applicants submit that the distance is from the nozzles to the moving fibre mesh (as indicated in paragraph [0014]). Also, in Fig 3, the distance “h” is clearly defined and also, in the section of description of an embodiment of the present invention [0045], there is a reference to that parameter “h”, therefore it is clearly defined. Applicants submit that it is possible that any confusion comes from Figure 3 where distance “h” seems to be from the middle of the application mean to the moving fibre. It is to be noted that the distance only can be from the nozzle and not from the middle of the means because in the range given for that distance in the specification, the lowest value is 1 cm, and this distance (1 cm) is too small to consider that it can be from the middle of the mean.

As regards claim 17, in order to overcome the Examiner’s rejection, Applicants amend the claim to read as follows: “Method according to claim 1, wherein the filler is applied prior to the joining of the layers of fibre.”

As regards claims 19 and 20, Applicants submit that when talking about a control means for a flow, and more specifically the named “return,” it is obvious to one of ordinary skill in the art that a “return” means a “return valve.” Taking this into account, the return is a return valve and impart of a control means. Apart from that, a control means comprises also a pressure regulator, a flow regulator and a pump fitted with a frequency shifter. (*See*, paragraph [0021])

As regards claims 36 and 37, Applicants submit that as defined in paragraph [0028] and [0032], the dry extract refers to the filler before mixing the same with water to obtain the suspension. Applicants respectfully contend that it is clear that the dry extract is the same as the dry filler. In view of this, paragraph [0032] of the specification is amended to read “[0032] The filler applied as aqueous suspension on the fibre mesh can comprise between 0,5 g/m² and 50 g/m² of dry extract, preferably between 5 g/m² and 15 g/m² of dry extract.” No issue of new

matter arises by way of this change because one of ordinary skill in the art would readily understand that this is what was described and what was intended by the original words.

As regards claim 40, Applicants respectfully submit that the claim is clear. As explained, *supra*, Applicants refer to different pastes (a virgin paste, a recycle paste, etc.), but it is important to realize that the multi-layer pulp (the final product of the present invention) can be composed by different kind of pastes (a virgin paste, a recycle paste, etc.). Therefore, both expressions do not refer to the same thing. One expression refers to the pulp, and the other expression refers to the different type of pastes which can constitute the pulp.

Rejection under 35 U.S.C. 102

The Examiner rejects claims 1-3, 6-8, 10-13, 17-18, 22-25, and 32-42 as allegedly anticipated by Coleman, U.S. Patent 4,008,121. Coleman discloses a method of opacifying one or both sides of a multi-ply paperboard by spreading pigment particles over one or more of the ply surfaces where the consumption of bleached pulp can be reduced either by eliminating bleached pulp plies or reducing their weight. A first paper ply is formed and subsequently further plies are formed onto the first ply wherein pigment particles are spread between the pair of plies by forcing the suspension through a horizontal slot, establishing a falling curtain of the suspension. The pigment particles may be suspended in a liquid binder and the suspension applied between the pair of plies. The pigment particles may be comprised of clay and/or titanium dioxide particles. The liquid binder may be comprised of a starch solution, carboxy methyl cellulose, polyvinyl alcohol, casein or synthetic lattices. The clay content can be between 1 and 15 % of the total weight of the board. Also, a spread of pigment particles can be applied without a binder, for example, by a spraying technique.

In order to further distinguish the present invention from the teachings of Coleman, kaolin and talc are removed from the filler selection of claim 1. Claim 1 now reads as follows:

“A method for manufacturing a multi-layered pulp-product, the method comprising

- continuously providing a fibre material from at least one entrance box of a pulp-product manufacturing machine;
- depositing the fibre material on at least two sections of the pulp-product manufacturing machine, thereby obtaining at least two fibre meshes that form different layers of the fibre material at at least two layer forming sections;

- draining said layers during their travel along at least one layer-forming section; and
- joining together at least said two layers of fibre material;

wherein introducing, by applicator means, a filler at least between said two layers of fibre material which are being moved by a conveyor means; the filler being selected from the group consisting of calcium sulphate, calcium carbonate, titanium dioxide, aluminum oxides, and combinations thereof.”

Rejection under 35 U.S.C. 103

1. Coleman

The Examiner rejects all of the remaining claims 4-5, 9, 14-16, 19-21 and 26-31 as allegedly obvious over Coleman, U.S. Patent 4,008,121. The Examiner admits that Coleman is silent regarding the specifics of the distance of the introduction of the fillers, the angle inclination of spray nozzles, types of fillers, etc. However, the Examiner maintains that the specifics of the fillers including size distributions and different hydrates are well known and that it would be obvious to use them. Further, the Examiner says that it would be obvious to optimize the position of the spray with respect to the web or headbox.

As set forth, *supra*, in order to further distinguish the present invention from the teachings of Coleman, kaolin and talc are removed from the filler selection of claim 1 or order to further distinguish the present invention over Coleman. As disclosed in the present specification, the present invention provides unexpectedly superior results in comparison to the methods disclosed by Coleman. First, according to the methods of Coleman, the clay particles which are spread on the ply surface have a distribution of between 20 g/m² and 60 g/m², while in the present invention the clay particles have a distribution of preferably between 5 g/m² and 15 g/m² of dry extract. That considerably reduces the costs of the manufactured product following the method disclosed in the present invention. Second, in the present invention, the filler retentions are higher than 70%, and no chemical agents have to be used. (*See*, paragraph [0036]) This reduces the use of filler and therefore reduces the manufacturing costs. Third, the present invention also indicates the possibility of controlling the quality of the layers, i.e. being able to have different quality depending on whether it is the inner or the outer layer. (*See*, paragraph

[0036]) Fourth, as described in paragraph [0023], it is very important for the present invention that the filler pigment that can penetrate into the interior of the fibre mesh is determined by the distance of the application means and the spraying angle with respect to plane of moving fibre mesh. The depth of the penetration impacts on the strength how two or more fibre meshes are joining together.

2. *Nicholson*

The Examiner rejects all of the pending claims 1-42 as allegedly obvious over Nicholson, U.S. Patent No. 2,286,924. The Examiner admits that Nicholson does not teach any specific filler additives or different size distributions of the same. However, the Examiner says such filler additives are well known in the art. Moreover, according to the Examiner, it would be obvious to optimize the position of the spray with respect to the web or headbox.

As the Examiner knows, in order to establish a proper *prima facie* case of obviousness, the Examiner must establish that there is a suggestion or motivation to modify the references or to combine the reference teachings; there must be a reasonable expectation of success; and the references or combination of references must teach or suggest all of the claim limitations (*see, e.g.,* MPEP § 2142). The teachings or suggestions to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure (*In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cr. 1991)). The arguments advanced by the Examiner fail to meet all of these criteria. The Examiner admits that Nicholson does not teach any specific filler additives or different size distributions of the same. However, the Examiner says such filler additives are well known in the art. Moreover, according to the Examiner, it would be obvious to optimize the position of the spray with respect to the web or headbox. Applicants submit that there is no motivation to come to the specific filler additives and size distributions of the present invention. Likewise, there is no reasonable expectation that such would be successful. Therefore, the Examiner has not set forth a proper *prima facie* case of obviousness.

Nicholson teaches a method, using Fourdrinier machines, for manufacturing multi-ply sheet material. Nicholson also provides for adding any desirable stock modification material, such as chemical, filler, adhesive or other substance (for example animal glue, sizing material, sodium

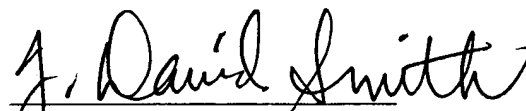
silicate, latex compounds) in the union zone between successively applied layers of fibrous material. This modifying material may be in an aqueous or another solution suspension or mixture, and may be flowed by means of a distributing device which uniformly distributes such material across the web. This material may form a protective or modified coating or may serve as an adhesive for bonding the fibres with other fibres of a layer subsequently applied. The homogeneous interfelted sheet comprising layers of fibrous material disclosed by Nicholson may vary widely in characteristics.

Applicants submit that even if, *assuming arguendo*, the Examiner had set forth a proper *prima facie* case of obviousness, it is a fundamental principle of the patent law that secondary considerations such as unexpected results may be used to rebut any alleged *prima facie* case of obviousness. As disclosed in the present specification, the present invention provides unexpectedly superior results in comparison to the methods disclosed by Coleman. In the present invention, the clay particles have a distribution of preferably between 5 g/m² and 15 g/m² of dry extract. That considerably reduces the costs of the manufactured product following the method disclosed in the present invention. Second, in the present invention, the filler retentions are higher than 70%, and no chemical agents have to be used. (*See*, paragraph [0036]) This reduces the use of filler and therefore reduces the manufacturing costs. Third, the present invention also indicates the possibility of controlling the quality of the layers, i.e. being able to have different quality depending on whether it is the inner or the outer layer. (*See*, paragraph [0036]) Fourth, as described in paragraph [0023], it is very important for the present invention that the filler pigment that can penetrate into the interior of the fibre mesh is determined by the distance of the application means and the spraying angle with respect to plane of moving fibre mesh. The depth of the penetration impacts on the strength how two or more fibre meshes are joining together.

CONCLUSION

Entry of the foregoing amendments and remarks into the record of the above identified application is respectfully requested. It is believed that all of the claims are in condition for allowance. If any issue can be resolved telephonically, the Examiner is requested to call the undersigned at the phone number provided.

Respectfully submitted,

A handwritten signature in black ink that reads "J. David Smith". The signature is written in a cursive style with a large, looped "J" and a long, sweeping "S".

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